APPLICATION PACKET

FOR

HOT MIX ASPHALT PLANT

GENERAL PERMIT

Arizona Department of Environmental Quality

Air Quality Division

May 11, 2006

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I. INTRODUCTION

This application has been developed specifically for applicants pursuing coverage under the Hot Mix Asphalt Plant General Permit in lieu of an individual permit. To expedite the processing of an air quality control permit application, the Arizona Department of Environmental Quality (ADEQ) has created a general permit for Hot Mix Asphalt Plants. Facilities, which meet the criteria in this general permit application, will be permitted under the Hot Mix Asphalt Plant General Permit and will pay lower annual air quality fees than Hot Mix Asphalt Plants covered under individual air quality permits.

This application packet assists the applicant in the submittal of information that is required to process their application for an air quality control permit. Applicants wishing to obtain a Hot Mix Asphalt Plant General Permit shall apply to ADEQ, except for facilities solely located on an Indian Reservation or in Pima, Pinal, or Maricopa Counties, for which, the local air quality agency will process the air quality permit application. However, if the facility located on an Indian Reservation or in Pima, Pinal, or Maricopa Counties will be moved within the state, the applicant shall apply to ADEQ. If the applicant has any questions regarding jurisdictional issues, please contact the appropriate agency at the phone number below:

ADEQ: 1-800-234-5677 ext 771-2337
Maricopa County: (602) 506-6094
Pima County: (520) 740-3340
Pinal County: (520) 866-6929

A. APPLICABILITY

1. The Hot Mix Asphalt Plant General Permit, hereafter referred to as General Permit, covers the following facilities that are subject to Federal New Source Performance Standards (NSPS), State regulations, and/or County Regulations.

TABLE: A ACTIVITIES COVERED UNDER THIS GENERAL PERMIT

Facility	Maximum Capacity
HMA Plant	500 tons per hour
Crushing and Screening Plant	500 tons per hour
Concrete Batch Plant	1175 cubic yards per day
Internal Combustion Engines	2000 horsepower

If the capacity exceeds any of the above-specified limits, the facility does not qualify for General Permit and must apply for an individual permit.

2. Operating hours for all equipment covered under the permit will be restricted such that the emission limits for the pollutants do not exceed limits given in Table: B.

TABLE: B EMISSION LIMITS FOR STATEWIDE AND MARICOPA COUNTY

Pollutant	Maricopa County		State wide except Maricopa County
	Emission limit		Emission Limit
	Pounds per day	Tons per year	Tons per year
PM	135	22.5	90
PM_{10}	76.5	13.5	90
CO	495	90	90
NO_x	135	22.5	90
SO_2	135	22.5	90
VOC	135	22.5	90

B. AUTHORIZATIONS TO OPERATE

1. If the applicant meets the criteria for coverage under this General Permit, an Authorization To Operate (ATO) will be issued for each drum dryer, asphalt heater, pug mill, concrete batch plant, silo, crusher, screen and internal combustion engine (except those which are integrated into other process equipment).

2. If the applicant is a rental company, the applicant will apply for coverage under this General Permit by grouping together representative equipment that are typical of the plants that are rented out to the Hot Mix Plant industry. Depending upon the amount of rental equipment that is owned by the applicant, it is possible that the applicant may end up with multiple coverages under this General Permit.

C. STATIONARY SOURCES

Stationary sources wishing to obtain coverage under this General Permit and associated ATOs will be required to apply to the ADEQ, except for stationary sources that are located in Maricopa, Pima or Pinal County. These stationary sources will be required to obtain coverage under this General Permit from the respective air quality agency.

D. PORTABLE SOURCES

1. A portable source is any stationary source that is capable of being transported and operated in more than one county of Arizona.

2. According to Arizona Revised Statutes (A.R.S.) §49-402, portable sources wishing to obtain coverage under this General Permit will be required to apply to the ADEQ. However, if the portable source will operate for the term of this General Permit in Maricopa, Pima or Pinal County, the facility should contact the respective air quality agency to obtain an appropriate air quality permit.

3. A portable source which has received coverage under this General Permit from either the Maricopa, Pima or Pinal County air quality agency may not operate in any other county, unless one of the following occurs:

   a. If a portable source is proposing to operate in a county without an air quality department, then the portable source will be required to apply to the ADEQ and obtain coverage under this General Permit before beginning operations in that county; or

   b. If a portable source is proposing to operate for the remaining term of this General Permit in another county with an air quality agency, then the portable source will be required to apply to the respective agency to obtain an appropriate air quality permit before beginning operations in that county.

E. PERMIT ISSUANCE TIME FRAME

According to Arizona Administrative Code (A.A.C.) R18-1-525, ADEQ has 21 business days to determine if the submitted general permit application is complete. Once the application is determined to be complete, the Department has 103 business days to make a licensing decision on the application. The Department, upon the determination that additional information is needed, can suspend the counting of the days. In such a case, a letter will be sent to the applicant informing them that the counting of days has been suspended, and will also specify what additional information is necessary to continue processing the application.

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II. APPLICATION INSTRUCTIONS

This section of the application packet helps the applicant assemble a complete application, make the appropriate calculations, complete a compliance plan/certification, and submit all information in a manner that will expedite the application review.

ADEQ recognizes that HMA plants, in general, move and change equipment configuration frequently. The information provided in the application should reflect the current situation.

Please read all sections of this application packet very carefully. Provide all information requested. The final application submitted should include all the forms in the application packet and any attachments necessary to submit the information (i.e. map, plot plan, etc.). Make additional copies of the forms as necessary to be sure that all information is included.

STEP 1: PERMIT APPLICABILITY VERIFICATION

Complete the permit applicability verification questions found on Form 1 to ensure that the facility does qualify for a Hot Mix Asphalt Plant General Permit. If the facility does not qualify for coverage under the general permit, then a permit application for an individual hot mix asphalt plant permit must be completed and submitted to ADEQ.

STEP 2: STANDARD APPLICATION FORM

A.A.C. R18-2-304 requires applicants to submit the Standard Application Form. The first step in fulfilling the submittal requirements for coverage under the General Permit is properly completing FORM 2 "STANDARD APPLICATION FORM". Instructions are as follows:

1. Items #1 through #4: Complete Permit to be issued to, Mailing Address, Previous Company Name (if applicable), Name of Owner/Principals and Phone, Fax and E-mail of Owner/Principals.

2. Item #5: Enter name of Owner's Agent if another individual/company will be submitting the general permit application on the owner's behalf.

3. Item #6: The Plant/Site Manager or Contact Person shall be the person the ADEQ may contact for any additional information.

4. Item #7: Specify the name and location of the plant. The township/range/section may be substituted for latitude/longitude coordinates which are specified in degrees, minutes and seconds.

5. Item #8, the "Equipment Name/Purpose and Equipment List/Description" should describe what is produced at the plant. The Equipment List/Description can be referenced to Form 6.

6. Item #9: If the "other" box is checked, please be specific as to what the organization is.

7. Item #10: asks for the Permit Application Basis, which indicates what type of permit is necessary.

a. If the equipment has never been permitted, then the boxes titled "New Source" and "General Permit" should be checked.

b. If the equipment is already permitted under an individual permit and you are applying for coverage under the General Permit, then the boxes titled "Renewal of Existing Permit" and "General Permit" should be checked and the current permit number must be included on the line titled "For renewal or modification, include existing permit number".

c. If you have a group of equipment covered by the General Permit and you are adding additional equipment, then the boxes titled "Revision" and "General Permit" should be checked and the current General Permit Number(s) must be included on the line titled "For renewal or modification, include existing permit number".

d. If the equipment is portable, then the box titled "Portable Source" should be checked.

e. For new sources the "Date of Commencement of Construction or Modification" is the expected date that construction will begin. For existing sources this date need not be defined.

f. If there is any chance that the equipment will be leased out, answer "yes" in the appropriate box.

g. The "Standard Industrial Classification Code" for Hot Mix Asphalt plants is **2951**.

h. The "State Permit Class" for Hot Mix Asphalt plants utilizing this application packet is "**Class II General**".

8. Items #11 and #12: The "Responsible Official" is the owner or a partner of the company in most cases. It may also be the president or vice-president of larger companies. This official will ensure that the information submitted in the application is correct and that the requirements of the permit are followed. If there is a question as to who the responsible official is, contact ADEQ for more information.

STEP 3: PROCESS DESCRIPTION

Please provide a complete description of the manufacturing process. The description should begin with the raw materials and end with the finished product, including how the process material is received, processed, stored, and mixed, as well as how the final products are handled. The process description must include the amount of material the plant is able to process.

The process description should be accompanied by a process flow diagram. This diagram should depict all the processes and pollution abatement equipment. The reviewer should be able to read the process description while looking at the process flow diagram, and relate exactly what is happening to the raw materials and products.

If the hot mix asphalt plant is collocated with a crushing and screening plant and/or concrete batch plant, then the additional equipment must be described in detail as discussed in the two previous paragraphs.

STEP 4: CALCULATION OF EMISSIONS

Air pollutant emission rate information must be provided by filling in all the Tables in Sections I through VII of Form 3. These tables in Form 3 provide worksheets to assist the applicant in calculating emission rates from the various processes associated with the hot mix asphalt plant operations, internal combustion engines, and collocated crushing and screening and concrete batch plant operations (if applicable). Emissions factors based on AP-42 documents are provided in these tables to facilitate calculations. The applicant may, however, choose to use emission factors provided by manufacture data or test results. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements, as outlined in the General Permit.

Total emissions from each section must be transferred to Table 19 in Section VIII of Form 3 to estimate **Facility-wide Emissions** in pounds per hour. The emission factors listed in the tables have been taken from ADEQ memos titled "Emission Guidance Document for Hot Mix Asphalt Operations", dated October 7, 2003; "Emission Guidance Document for Crushing and Screening Operations" dated April 25, 2005 and "Determining Emissions from Concrete Batching Operations" dated October 31, 2005. These documents are based on AP-42 Section 3.2– Natural Gas Fired Reciprocating Engines (8/2000), Section 3.3 - Gasoline and Diesel Industrial Engines (10/1996), Section 3.4 - Large Stationary Diesel and All Stationary Dual-fuel Engines (10/1996), Section 11.1-Hot Mix Asphalt Plants (04/2004), Section 11.12-Concrete Batching (10/2001), Section 11.19-Crushed Stone Processing and Pulverized Material Processing (8/2004), Section13.2-Paved Roads and Unpaved Roads (12/2003).

Form 4 should be used to calculate the synthetic minor annual operating hours limitation for Statewide operations outside of Maricopa County.

Form 5 should be used to calculate the synthetic minor daily and annual operating hours limitation for operations inside Maricopa County.

STEP 5: Equipment List

1. ADEQ needs to be able to identify all pieces of equipment covered under the General Permit. Use Form 6 to provide a list of all equipment to be permitted including control equipment and internal combustion engines (this does not include internal combustion engines associated with motor driven vehicles). **The list should include not only the type of equipment, but also the make, model, maximum rated capacity, serial number, manufacture date, and equipment identification number (if available) of each piece of equipment.** Please make additional copies if necessary.

2. In many cases, the equipment will not yet have been purchased at the time of application. If this is the case, the serial number does not need to be listed, but an equipment identification number will need to be provided when it becomes available. The Permittee shall request for revisions to the ATOs to incorporate the additional information.

STEP 6: Compliance Certification and Certification of Truth, Accuracy and Completeness

A compliance certification must be submitted by all applicants. FORM 7 can be used to submit a complete compliance certification.

STEP 7: Map of Facility Location

Please provide a map of the current facility location, depicting the perimeter and point of entry. This may be a city map, topographical map or any map that clearly shows the location. Mark the location of the facility on the map and submit it as part of the application. The map should include driving directions to the facility site from the nearest highway.

STEP 8: Plot Plan

Please provide a plot plan of the current equipment configuration. A plot plan is an aerial drawing of the plant property drawn to scale or with the dimensions shown. It should include:

1. A schematic of the typical equipment layout;
2. Location of all stacks, tanks, silos, bins, conveyors, storage piles, control equipment, and all other equipment;
3. Clearly identified and numbered emission points which correspond to the emission sources form;
4. A scale, if the drawing is to scale; and
5. Photographs of the equipment, if available

STEP 9: Dust Control Plant

If the initial location of the facility is in Maricopa County, the facility must submit a Dust Control Plan as described under Maricopa County Rule 310. The applicant may use the form available at http://www.maricopa.gov/aq/permits/docs/Empermit.pdf. This form must be filled in and submitted to ADEQ along with the application.

STEP 10: Filing Instructions

1. All applicants must submit an Application Fee of $500. Please make your check or money order payable to ADEQ. The Application Fee must accompany each application submittal.

2. Please mail Forms 1 through 7 of the completed application, the Map of Facility Location, the Plot Plan, the Process Description and the $500 Application Fee to the following address:

Arizona Department of Environmental Quality
Air Quality Division
1110 West Washington
Phoenix, Arizona 85007

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FORM 1: GENERAL PERMIT APPLICABILITY VERIFICATION

The following questions have been developed to determine if your facility qualifies for coverage under the Hot Mix Asphalt Plant General Permit or is required to obtain an individual air quality permit pursuant to A.A.C. R18-2-302.

General Permit Applicability

A. Does the hot mix asphalt plant have a maximum throughput greater than 500 tons per hour?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question B.

B. Does the facility co-locate a crushing and screening plant with the hot mix asphalt plant?

☐ YES ☐ NO **If the answer is YES**, proceed to Question C.
If the answer is NO, proceed to Question D.

C. Does the collocated crushing and screening plant have a maximum throughput greater than 500 tons per hour?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question D.

D. Does the facility co-locate a concrete batch plant with the hot mix asphalt plant?

☐ YES ☐ NO **If the answer is YES**, proceed to Question E.
If the answer is NO, proceed to Question F.

E. Does the collocated concrete batch plant have a maximum throughput greater than 1175 cubic yards per day?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question F.

F. Is the total horsepower rating of all internal combustion engines used at the facility (excluding engines determined to be non-road engines by ADEQ) greater than 2000 horsepower?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question G.

G. Does your facility meet all of the following stack parameter criteria?

- The height above ground of the drum dryer stack is 22 feet or greater.
- The height above ground of all internal combustion engine stacks is 12 feet or greater.
- The height above ground of all asphalt heater stacks is 14 feet or greater.

- All stacks located within 5L (where "L" is the lesser of the building height or width) of a building (either on-site or off-site) are $\geq$1.5H (where "H" is the building height), or the stack is located more than 5L away from any buildings (either on-site or off-site).
- Rain caps for the stacks of generators, if used, are hinged.

☐ YES ☐ NO **If the answer is YES**, proceed to Question I.
If the answer is NO, proceed to Question H.

H. Will the facility be able to adjust their stacks to comply with the requirements in Question G above?

☐ YES ☐ NO **If the answer is YES**, proceed to Question I.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

I. Does the rotary drum dryer burn any fuels other than natural gas, diesel, or fuel oil?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question J.

J. Do the asphalt heater(s) and internal combustion engine(s) burn any fuels other than diesel, natural gas or LPG?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question K.

K. If the facility is using fuel oil/diesel in I or J above, is the sulfur content more than 0.9 percent?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question L.

L. Does the facility utilize the following air pollution controls (as applicable)?

1. Venturi scrubber/baghouse for Rotary Drum Dryer;
2. Spray bars or baghouse for crushers, screens, transfer points, stackers;
3. Sprinklers or water truck or water hose and/or chemical surfactant/dust palliative for haul roads and storage piles;
4. Spray bars or baghouse for feed hoppers, elevated bins, weigh hoppers;
5. Baghouse or venturi scrubber for cement silo; and
6. Spray bars or sprinklers or water hose or baghouse for mixer loading.

☐ YES ☐ NO **If the answer is NO**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is YES, proceed to Question M.

M. Will the facility be operating in Maricopa County?

☐ YES ☐ NO **If the answer is YES**, proceed to Question N.
If the answer is NO, proceed to Question P.

N. Will the facility be able to limit its operating hours to the number of daily and annual hours calculated in Form 5 while operating in Maricopa County?

☐ YES ☐ NO **If the answer is YES**, proceed to Question O.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

O. While operating in Maricopa County, will the facility be burning any fuel that has sulfur content more than 0.05 percent?

☐ YES ☐ NO **If the answer is YES**, this facility does not qualify for coverage under the general permit and must obtain an individual permit.
If the answer is NO, proceed to Question P.

P. Will the facility be able to limit its operating hours to the number of hours calculated in Form 4 while operating Statewide outside of Maricopa County?

☐ YES ☐ NO **If the answer is YES**, this facility qualifies for coverage under the general permit.
If the answer is NO, this facility does not qualify for coverage under the general permit and must obtain an individual permit.

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FORM 2: ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
1110 West Washington St ♦ Phoenix, AZ 85007 ♦ Phone: (602) 771-2338

STANDARD PERMIT APPLICATION FORM

(As required by A.R.S. § 49-426, and Chapter 2, Article 3, Arizona Administrative Code)

1. Permit to be issued to: (Business license name of organization that is to receive permit) _____

_____

2. Mailing Address: _____

City: _____ State: _____ ZIP: _____

3. Previous Company Name: (if applicable) _____

4. Name (or names) of Owners/Principals: _____

Phone: _____ Fax: _____ Email: _____

5. Name of Owner's Agent: _____

Phone: _____ Fax: _____ Email: _____

6. Plant/Site Manager/Contact People and Title: _____

Phone: _____ Fax: _____ Email: _____

7. Plant Site Name: _____

Plant Site Location/Address: _____

City: _____ County: _____ ZIP: _____

Indian Reservation (if applicable, which one): _____

Latitude/Longitude, Elevation: _____

8. Equipment Purpose: _____

Equipment List/Description: _____

_____

_____

9. Type of Organization:

☐ Corporation ☐ Individual Owner ☐ Partnership

☐ Government Entity (Government Facility Code:_____) ☐ Other _____

10. Permit Application Basis: ☐New Source ☐ Revision ☐ Renewal of Existing Permit

(Check all that apply.) ☐ Portable Source ☒ General Permit

For renewal or modification, include existing permit number (and exp. date): _____

Date of Commencement of Construction or Modification: _____

Is **any** of the equipment to be leased to another individual or entity? ☐ Yes ☐ No

Standard Industrial Classification Code: **2951** State Permit Class: **Class II General**

11. Signature of Responsible Official of Organization: _____

Official Title of Signer: _____

12. Typed or Printed Name of Signer: _____

Date: _____ Telephone Number: _____

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FORM 3: EMISSION CALCULATIONS

I. EMISSION FROM ROTARY DRUM DRYER

Tables 1 and 2 are provided to calculate controlled particulate matter (PM) and particulate matter less than 10 microns (PM_{10}) emissions from the **Baghouse/Venturi Scrubber** of Rotary Drum Dryer. Tables 3 and 4 are provided to calculate Potential to Emit (PTE) for other criteria pollutants from the Rotary Drum Dryer.

PARTICULATE MATTER EMISSIONS

Table 1 must be completed to calculate the controlled potential to emit of particulate matter from the rotary drum dryer for a **Drum Mix Process**, and Table 2 must be completed to calculate the controlled potential to emit (PTE) of particulate matter from the rotary drum dryer for a **Batch Mix Process.** The emissions, in pounds/hour, are calculated by multiplying rated capacity of hot mix asphalt plant (a) by the appropriate emission factors in columns (b) and (c).

Rated Capacity of Hot Mix Asphalt Plant: _____ (a) tons per hour

Table 1 - Drum Mix Process

Pollution Control Device	Emission Factor		Emissions	
	PM	PM_{10}	PM	PM_{10}
	Pound per ton of asphalt		Pounds per hour	
	b	c	d = a x b	e = a x c
Bag Filter	0.033	0.023		
Venturi Scrubber	0.045	0.019		

Table 2 - Batch Mix Process

Pollution Control Device	Emission Factor		Emissions	
	PM	PM_{10}	PM	PM_{10}
	Pound per ton of asphalt		Pounds per hour	
	b	c	d = a x b	e = a x c
Bag Filter	0.042	0.027		
Venturi Scrubber	0.14	0.017		

Emissions'd' & 'e' from Table 1 or Table 2 must be transferred to Table 5.

OTHER CRITERIA POLLUTANTS

Tables 3 and 4 are provided to calculate PTE for other criteria pollutants for Rotary Drum Dryer. Table 3 must be completed for a **Drum Mix Process**, and Table 4 must be completed for a **Batch Mix Process.** The emissions, in pounds per hour, from the rotary drum dryer are to be calculated by taking the rated capacity of the hot mix plant (a) and multiplying it by the emission factors in columns 'b' or 'c' or 'd' corresponding to the type of fuel used. These factors are taken from AP-42 Section 11.1. The applicant may, instead, chose to use emission factors provided by the manufacturer or test results by filling these in column 'e' and multiplying rated capacity (a) by (e) in column (f). In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements, as outlined in the General Permit.

Rated Capacity of Hot Mix Asphalt Plant: _____ (a) tons per hour

Type of fuel used: _____

Table 3 - Drum Mix process

Pollutant	Emission Factors			Emission factor (other)	Emissions
	Natural Gas	Diesel	Fuel oil		
	Pounds per ton of asphalt				Pounds per hour
	b	c	d	e	f = a x (b or c or d or e)
CO	0.13	0.13	0.13		
NO_x	0.026	0.055	0.055		
SO_2	0.0034	0.011	0.058		
VOCs	0.032	0.032	0.032		

Table 4 - Batch Mix process

Pollutant	Emission Factors			Emission factor (other)	Emissions
	Natural Gas	Diesel	Fuel oil		
	Pounds per ton of asphalt				Pounds per hour
	b	c	d	e	f = a x (b or c or d or e)
CO	0.4000	0.4000	0.4000		
NO_x	0.0250	0.1200	0.1200		
SO_2	0.0046	0.0880	0.0880		
VOCs	0.0082	0.0082	0.0360		

Calculated emissions from above Table 3 or Table 4 must be transferred to Table 5.

TOTAL EMISSION FROM ROTARY DRUM DRYER

The calculated particulate matter emissions (Table 1 or 2) and emissions for other criteria pollutants (Table 3 or 4) must be transferred to Table 5 below to estimate total emissions from Rotary Drum Dryer.

Table 5: TOTAL EMISSIONS FROM DRUM DRYER

Pollutant	Emissions (pounds per hour)	Remarks
PM		From Table 1 or 2
PM_{10}		
CO		From Table 3 or 4
NO_x		
SO_2		
VOCs		

Emissions from Table 5 must be transferred to Total Emissions Table 19.

II: CONTROLLED PARTICULATE MATTER EMISSIONS FROM MATERIAL HANDLING OPERATIONS IN THE HOT MIX ASPHALT PLANT

The following tables must be completed in order to calculate controlled particulate matter (PM) and particulate matter less than 10 microns (PM_{10}) emissions from the material handling operations in the hot mix asphalt plant. Point Source Emissions are calculated in Table 6. Emissions, in pounds/hour, are calculated by taking the maximum capacity (a), multiplying it by the no. of operations (n) and emission factors for each pollutant in columns (b) and (c). (Do not use these tables for emissions from collocated crushing & screening plant or concrete batch plant.). Tables 7 and 8 are for calculating fugitive emissions due to vehicular traffic and storage piles.

Table 6 – Controlled Point Source emissions

Rated Capacity of Hot Mix Asphalt Plant: _____ (a) tons per hour

Emission source	No. of operations	Emission Factor		Emissions	
		PM	PM_{10}	PM	PM_{10}
	No.	Pounds per ton of Asphalt		Pounds per hour	
	n	b	c	D1 = a x n x b	E1 = a x n x c
Continuous Batch Drop Operations		2.00E-03	9.40E-04		
Aggregate Transfer to Feed Hoppers		2.00E-03	9.40E-04		
Aggregate Transfer to Elevated bins		2.00E-03	9.40E-04		
Aggregate Transfer Operations to weigh Hoppers		2.00E-03	9.40E-04		
Cement Transfer to Silo		1.00E-05	3.40E-06		
Cement Transfer to Weigh Hopper		8.09E-06	3.83E-06		
Conveyor Transfer Points		1.30E-04	4.28E-05		
Screening Operations		2.05E-03	6.88E-04		
Total				(D1)	(E1)

Table 7 – Controlled Fugitive Emissions Due To Vehicular Traffic

Table 7 is for calculating fugitive emissions caused by vehicular traffic. Number of Vehicle Miles Traveled/hour (VMT/hr) (n) is multiplied by PM and PM_{10} emission factors (b) and (c). VMT should include any traffic on access roads that do not have public access.

Emission source	VMT[1] per hour	Emission Factor		Emissions	
		PM	PM_{10}	PM	PM_{10}
		Pounds per VMT	Pounds per VMT	Pounds per hour	
	n	b	c	D2 = n x b	E2 = n x c
Vehicular traffic		0.66	0.17		

[1] VMT – Vehicle Miles Traveled

Table 8 - Controlled Fugitive Emissions from Storage Piles

Table 8 is for calculating fugitive emissions due to storage piles. Number of storage piles is multiplied by PM and PM_{10} emission factors (b) and (c).

Emission source	Number of piles	Emission Factor		Emissions	
		PM	PM_{10}	PM	PM_{10}
		Pounds per pile per hour	Pounds per pile per hour	Pounds per hour	
	n	b	c	D3 = n x b	E3 = n x c
Wind Erosion from Aggregate Storage Piles		0.0001	0.00005		

Table 9 - Total PM and PM_{10} Emissions from all material handling operations in HMA plant
(Add all PM and PM_{10} emissions from Tables 6, 7 and 8)

Emission from	Emissions	
	PM	PM_{10}
	Pounds per hour	
Table 6		
Table 7		
Table 8		
TOTAL		

Total PM and PM_{10} emissions from Table 9 must be transferred to Total Emissions, Table 19.

III. Emission calculations for Asphalt Heater

Table 10 must be completed to determine emissions from asphalt heater. Emissions are calculated on the basis of fuel used. The emissions, in pounds per hour, from the asphalt heater are to be calculated by taking the maximum Rated Fuel Consumption in the asphalt heater (a) and multiplying it by appropriate emission factors in columns b or c or d corresponding to the type of fuel used. These factors are taken from AP-42. The applicant may, instead, chose to use emission factors provided by the manufacturer or test results by filling these in column e and multiplying Rated Fuel Consumption (a) by (e) in column (f). In such an event, supporting documents (manufacturers' data sheet / test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements, as outlined in the General Permit.

Fuel used: _____

Fuel Consumption in Asphalt Heater: _____ (a) gallons per hour (for diesel /LPG)
Cubic foot per hour (for Natural gas)

Table 10: Emissions from Asphalt Heater

Pollutant	Emission Factors			Emission factor (other)	Emissions
	Diesel	LPG	Natural Gas		
	Pounds per gallon		Pounds per cubic foot		Pounds/hour
	b	c	d	e	f = a x (b or c or d or e)
PM	0.002	0.0005	7.60E-06		
PM_{10}	0.002	0.0005	7.60E-06		
CO	0.005	0.002	8.40E-05		
NO_x	0.02	0.0145	1.00E-04		
SO_2	0.1136	0.000076	6.00E-07		
VOCs	0.000556	0.00055	5.50E-06		

Emissions from Table 10 (Column 'f') must be transferred to Total Emissions, Table 19.

IV. Silo Filling and Plant Load-Out Emissions from HMA Plant

Table 11 must be completed to determine CO, VOC, PM, and PM_{10} emissions from silo filling and plant load out operations in the hot mix asphalt plant.

Rated Capacity of HMA Plant: _____ Tons per hour (a)

Table 11: Emissions from Silo Filling and Plant Load out

Pollutant	Emission Factor		Emissions		Total Emissions Pounds/hour f = d + e
	Silo Filling	Plant Load-Out	Silo Filling	Plant Load-Out	
	Pounds per ton of asphalt		Pounds per hour		
	b	c	d = a x b	e = a x c	
PM	0.00059	0.00052			
PM_{10}	0.000254	0.00034			
CO	0.0011	0.00135			
VOCs	0.0122	0.0039			

Emissions from Table 11 (Column 'f') must be transferred to Total Emissions, Table 19.

V. CONTROLLED PARTICULATE MATTER EMISSIONS FROM THE CRUSHING & SCREENING PLANT

Table 12 has been designed to calculate particulate matter emissions from the collocated crushing and screening plant, if applicable.

The form is designed to calculate the emissions for more than one equipment in each category. Provide equipment rated capacity in column a. If there is more than one equipment for the same capacity, enter the number in column b. If additional equipment in same category has different capacity, use additional line provided.

Table 12: Emissions from Crushing and Screening Plant

Emission Source	Rated Capacity	Number of operations	Emission Factor		Emissions	
			PM	PM_{10}	PM	PM_{10}
	Tons per hour	Number	Pounds/ton		Pounds per hour	
	a	b	c	d	E = a x b x c	F = a x b x d
Batch Drop Operation			0.0021	0.001		
Batch Drop Operation			0.0021	0.001		
Batch Drop Operation			0.0021	0.001		
Feed Hoppers			0.0021	0.001		
Feed Hoppers			0.0021	0.001		
Feed Hoppers			0.0021	0.001		
Crushing			0.0012	0.00054		
Crushing			0.0012	0.00054		
Crushing			0.0012	0.00054		
Fine Crushing			0.003	0.0012		
Fine Crushing			0.003	0.0012		
Fine Crushing			0.003	0.0012		
Screening			0.0022	0.00074		
Screening			0.0022	0.00074		
Screening			0.0022	0.00074		
Fines Screening			0.0036	0.0022		
Fines Screening			0.0036	0.0022		
Fines Screening			0.0036	0.0022		

Table 12 (continued)

Emission Source	Rated Capacity	Number of operations	Emission Factor		Emissions	
			PM	PM_{10}	PM	PM_{10}
	Tons per hour	Number	Pounds per ton		Pounds per hour	
	a	b	c	d	E = a x b x c	F = a x b x d
Stackers			0.0021	0.001		
Stackers			0.0021	0.001		
Stackers			0.0021	0.001		
Stackers			0.0021	0.001		
Conveyor Transfer points			0.00014	4.60E-05		
Conveyor Transfer points			0.00014	4.60E-05		
Conveyor Transfer points			0.00014	4.60E-05		
Conveyor Transfer points			0.00014	4.60E-05		
Conveyor Transfer points			0.00014	4.60E-05		
Total						

Emissions (Totals from columns E and F) from Table 12 must be transferred to Total Emissions, Table 19.

VI. CONTROLLED PARTICULATE MATTER EMISSIONS FROM THE CONCRETE BATCH PLANT

Table 13 and 14 must be completed in order to calculate the particulate matter emissions from the concrete batch plant.

Table 13 is to be used for calculating emissions, in pounds per hour, from the concrete batch plant by multiplying the maximum rated capacity of the concrete plant in tons per hour (a) by the emission factor for each pollutant in columns (b) and (c). Table 14 is to be used for calculating emissions from conveyor transfer points.

Maximum Rated Capacity of Concrete Batch Plant:

_____ Cubic yards per hour x 1.9 = _____ tons per hour (a)

Table 13: Emissions from Concrete Batch Plant

Emission Source	Emission Factor		Emissions	
	PM	PM_{10}	PM	PM_{10}
	Pounds per ton of concrete		Pounds per hour	
	b	c	D1= a x b	E1 = a x c
Continuous & batch drop operations onto aggregate storage piles	0.0002	0.00008		
Continuous & batch drop operations onto sand storage piles	0.00004	0.00002		
Aggregate transfer to feed hopper	0.0002	0.00008		
Sand transfer to feed hopper	0.00004	0.00002		
Aggregate transfer to elevated bins	0.0002	0.00008		
Sand transfer to elevated bins	0.00004	0.00002		
Aggregate transfer to weigh hoppers	0.0002	0.00008		
Sand transfer to weigh hoppers	0.00004	0.00002		
Cement transfer to silos	0.00014	0.00005		
Cement transfer to weigh hoppers	0.00011	0.00005		
Mixer loading (truck mix)	0.0282	0.0073		
Mixer loading (central mix)	0.0018	0.00061		
Screening	0.00103	0.00035		
Fine Screening	0.0017	0.001		
Total				

Emissions (Totals from columns D1 and E1) from Table 13 must be transferred to Table 15.

Table 14: Emissions from Transfer Points in Concrete Batch Plant

Emission Source	Number of transfer points	Emission Factor		Emissions	
		PM	PM_{10}	PM	PM_{10}
	No.	Pounds per ton		Pounds per hour	
	n	c	d	D2 = a x n x c	E2 = a x n x d
Conveyor transfer points (Aggregate)		0.000066	0.000022		
Conveyor transfer points (Sand)		0.00005	0.000017		
Total					

Emissions (Totals from columns D2 and E2) from Table 14 must be transferred to Table 15.

Table 15 - Total PM and PM_{10} Emissions from Concrete Batch Plant operations.
(Add all PM and PM_{10} emissions from Tables 13 and 14)

	Emissions	
	PM	PM_{10}
	Pounds per hour	
Total emissions from Table 13		
Total emissions from Table 14		
Total emissions from CBP		

Emissions from Table 15 must be transferred to Total Emissions, Table 19.

VII. FACILITY-WIDE INTERNAL COMBUSTION ENGINES

This form must be completed in order to calculate the emissions from the facility wide internal combustion engines (ICE), when they are burning diesel fuel, natural gas, or LPG. Emissions need not be calculated for mobile sources and engines that have been determined by the Director as 'non road engines'.

Table 16 should be used if the facility uses **ADEQ emission factors** to estimate emissions from ICEs. Emissions, in pounds per hour, from the internal combustion engine(s) are calculated by multiplying total rated HP of each type of internal combustion engines as listed in (a), (b) and (c) by the corresponding emission factor for each pollutant in column (d), (e) and (f). The applicant may choose to use **emission factors provided by the manufacturer or test results** for any/all of internal combustion engines by using **Table 19**. In such an event, supporting documents (manufacturers' data sheet/test results etc.) indicating these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements, as outlined in the General Permit.

Table 16: Emissions from ICEs

Total HP of all diesel ICEs with individual HP of less than 600 HP: _____ HP (a)
Total HP of all diesel ICEs with individual HP of greater than 600 HP: _____ HP (b)
Total HP of all natural gas / LPG fired ICEs: _____ HP (c)

Pollutant	Emission Factor			Emissions			Total Emissions from all ICEs
	Diesel Engines (Smaller than 600 HP)	Diesel Engines (larger than 600 HP)	Natural gas/ LPG-fired Engines	Diesel Engines (Smaller than 600 HP)	Diesel Engines (larger than 600 HP)	Natural gas/ LPG-fired Engines	
	(Pounds per hp-hr)			Pounds per hour			Pounds per hour
	d	e	f	A = a x d	B = b x e	C = c x f	E1 = A + B + C
PM	2.20E-03	7.00E-04	6.94E-05				
PM_{10}	2.20E-03	7.00E-04	5.40E-07				
CO	6.68E-03	5.50E-03	2.22E-03				
NO_x	3.10E-02	2.40E-02	2.86E-02				
SO_2	2.05E-03	6.47E-03	4.12E-06				
VOCs	2.47E-03	7.05E-04	8.26E-04				

Table 17 should be used if the facility wishes to use **manufacturers' data or test results** in place of ADEQ emission factors for any / all of its ICEs, this table must be completed to calculate emissions from those ICEs. In such an event, supporting documents (manufacturers' data sheet/test results etc.) documenting these factors must be submitted along with the application. Also, the Permittee will be subject to annual testing requirements, as outlined in the General Permit. Emission factor for each ICE must be filled in columns e to h and multiplied by rated horsepower for corresponding internal combustion engine (a) through (d).

Table 17: Emissions from ICEs

ICE 1: _____ HP (a) Fuel used: _____
ICE 2: _____ HP (b) Fuel used: _____
ICE 3: _____ HP (c) Fuel used: _____
ICE 4: _____ HP (d) Fuel used: _____

Pollutant	Emission Factor				Emissions				Total Emissions from all ICEs
	ICE 1	ICE 2	ICE 3	ICE 4	ICE 1	ICE 2	ICE 3	ICE 4	
	Pounds per hp-hr				Pounds per hour				Pounds per hour
	e	f	g	h	A = a x e	B = b x f	C = c x g	D = d x h	E2 = A + B + C + D
PM									
PM_{10}									
CO									
NO_x									
SO_2									
VOCs									

Table 18: Total Emissions from all ICEs

Pollutant	Total Emissions from Table 16 (E1)	Total Emissions from Table 17 (E2)	Emissions from all ICEs (E1 + E2)
	Pounds per hour	Pounds per hour	Pounds per hour
PM			
PM_{10}			
CO			
NO_x			
SO_2			
VOCs			

Emissions from Table 18 must be transferred to Total Emissions, Table 19.

VIII: FACILITY-WIDE EMISSIONS

Table 19 is for calculating facility-wide emissions and must be filled in with the calculated emissions from Tables 5, 9, 10, 11, 12, 15 and 18. These facility-wide emissions are used in Tables 20 and 21 to determine Synthetic Minor Limitation for operating hours.

Table 19: FACILTIY-WIDE EMISSIONS

Pollutant	Emissions from Drum Dryers	PM/PM_{10} Emissions from HMA Plant Aggregate Handling	Emissions from Asphalt Heater	HMA Plant Silo filling/Plant Load-Out Emissions	PM/PM_{10} Emissions from Crushing and Screening Plant	PM/PM_{10} Emissions from Concrete Batch Plant	Emissions from ICEs	**Facility-wide Emissions**
	(Table 5)	(Table 9)	(Table 10)	(Table 11)	(Table 12)	(Table 15)	(Table 18)	
	Pounds per hour	Pounds per hour	Pounds per hour	Pounds per hour	Pounds per hour	Pounds per hour	Pounds per hour	Pounds per hour
PM								
PM_{10}								
CO								
NO_x								
SO_2								
VOCs								

FORM 4: STATEWIDE SYNTHETIC MINOR CALCULATION FOR OPERATIONS OUTSIDE OF MARICOPA COUNTY

This table is to be used for calculating synthetic minor limitations for the facility that will be operating statewide outside of Maricopa County. Facility-wide Emissions in from Table 19 must be transferred to column (a) of Table 20 and utilized to calculate annual emissions and operating hours.

Table 20: Synthetic Minor Limitation – Statewide

Pollutant	Facility Wide Emissions (From Table 19)	Annual Emissions	Emission Limit	Annual operation hours
	Pounds per hour	Tons per year	Tons per year	Hours
	a	b = a x 4.38	c	d = c/b x 8760
PM_{10}			90	
CO			90	
NO_x			90	
SO_2			90	
VOCs			90	

The **lowest number** in column d is the synthetic minor limitation for operating hours for the facility.

Form 5: SYNTHETIC MINOR CALCULATION FOR OPERATIONS IN MARICOPA COUNTY

Table 21 is to be used for calculating synthetic minor limitations for the facility that will be operating in Maricopa County. Facility-wide Emissions in from Table 19 must be transferred to column 'a' of Table 21 and utilized to calculate daily & annual emissions and daily & annual operating hours.

Table 21: Synthetic Minor Limitation – Maricopa County

Pollutant	Facility Wide Emissions			Emission Limit for Maricopa County		Limitation on Operating Hours in Maricopa County	
	Pounds per hour	Pounds per day	Tons per year	Pounds per day	Tons per year	Hours per day	Hours per year
	a	b = a x 24	c = a x 4.38	d	e	F = d/b x 24	G = e/c x 8760
PM				135	22.5		
PM_{10}				76.5	13.5		
CO				495	90		
NO_x				135	22.5		
SO_2				135	22.5		
VOCs				135	22.5		

The lowest numbers in Columns 'F' and 'G' are the Limitations on Daily and Annual Operating Hours for Maricopa County.

FORM 6: EQUIPMENT LIST

ADEQ needs to be able to identify all pieces of equipment covered under the General Permit. Complete Form 6 to provide a list of all pieces of equipment to be permitted including control equipment and internal combustion engines. Please make additional copies if necessary.

Type of Equipment	Maximum Rated Capacity	Make	Model	Serial Number	Date of Manufacture	Equipment I.D. Number

FORM 7: COMPLIANCE CERTIFICATION AND CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS

This certification must be signed by the Responsible Official. Applications without a signed certification will be deemed incomplete.

I certify that I have knowledge of the facts herein set forth, that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by ADEQ as public record. I also attest that I am in compliance with the applicable requirements of the General Permit and will continue to comply with such requirements and any future requirements that become effective during the life of the General Permit. I will present a certification of compliance to ADEQ no less than semiannually and more frequently if specified by ADEQ. I further state that I will assume responsibility for the construction, modification, or operation of the source in accordance with Arizona Administrative Code, Title 18, Chapter 2 and any permit issued thereof.

Typed or Printed Company Name: _____

Official Title of Signer: _____

Typed or Printed Name of Signer: _____

Signature of Responsible Official: _____ Date: _____

FORM 8: Fee Rule Summary for General Permits

SOURCE

GENERAL PERMIT

CLASS II

TITLE V		NON - TITLE V	
APPLICATION FEE $500	**ANNUAL ADMINISTRATIVE FEE** Small Source: $540 All Other Sources: $3,250	APPLICATION FEE $500	**ANNUAL INSPECTION FEE** Gasoline Service Stations: $540 Crematoriums: $1,080 All Others: $2,170

There is no fee for transfers, administrative amendments, or facility change notices that do not require a permit revision.
Administrative and Inspection fees are due each year no later than February 1 of each year.
Information for this table was taken from A.A.C. R18-2-511